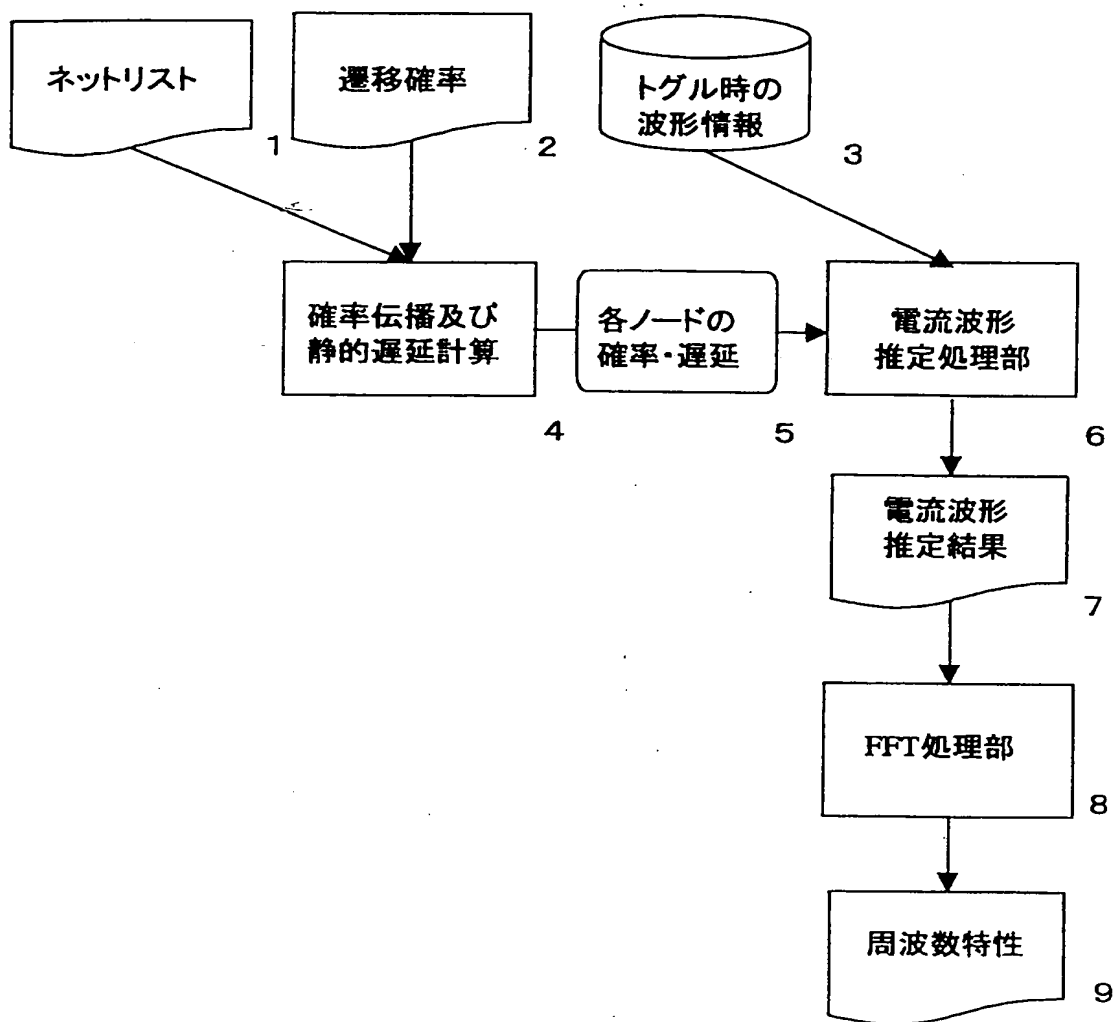
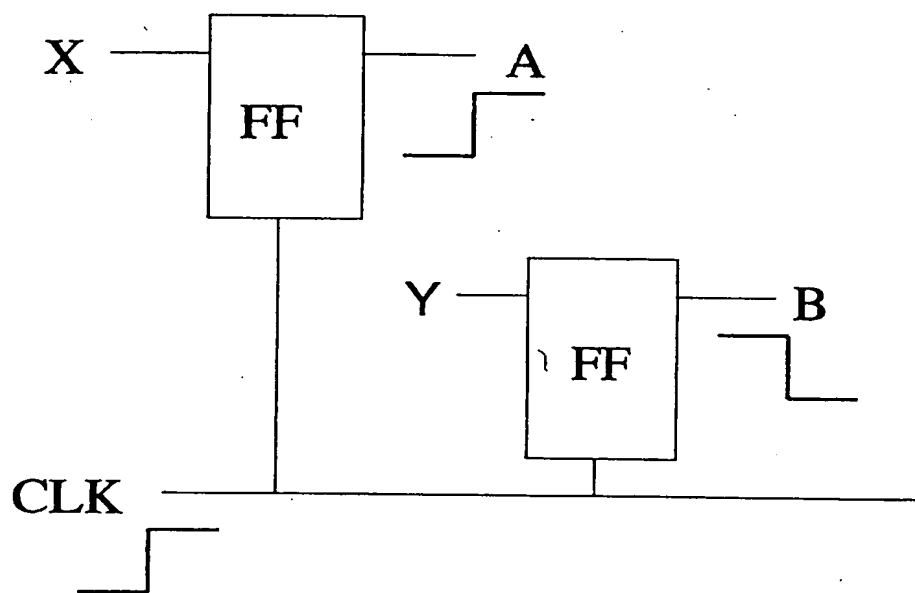


Fig.1



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Fig.2.



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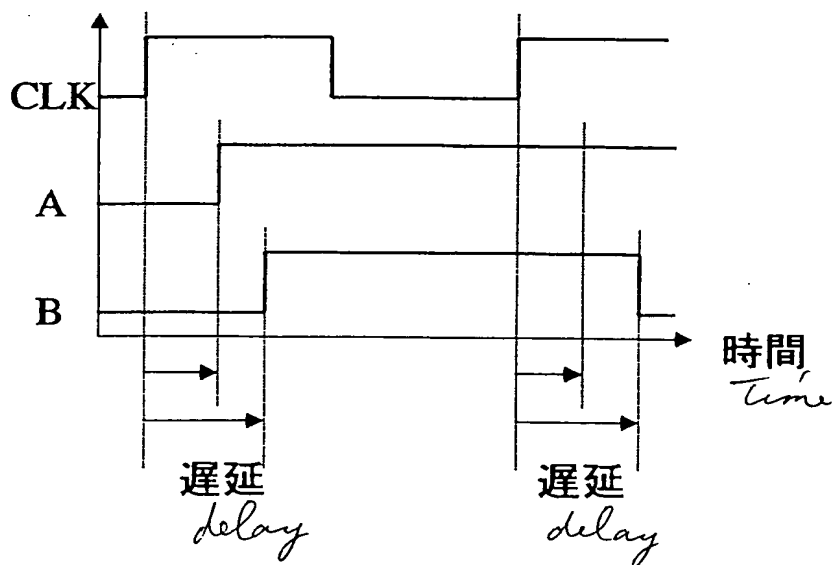
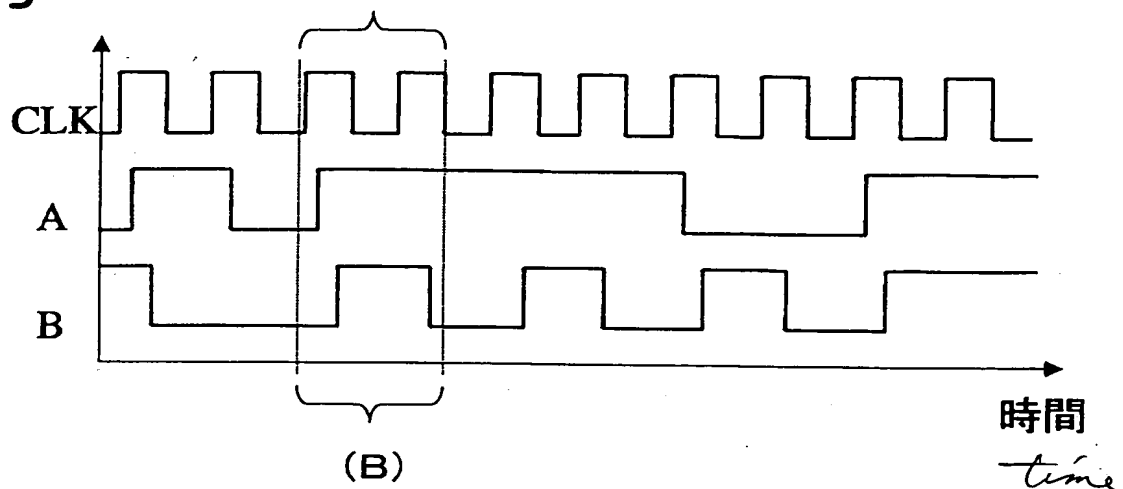
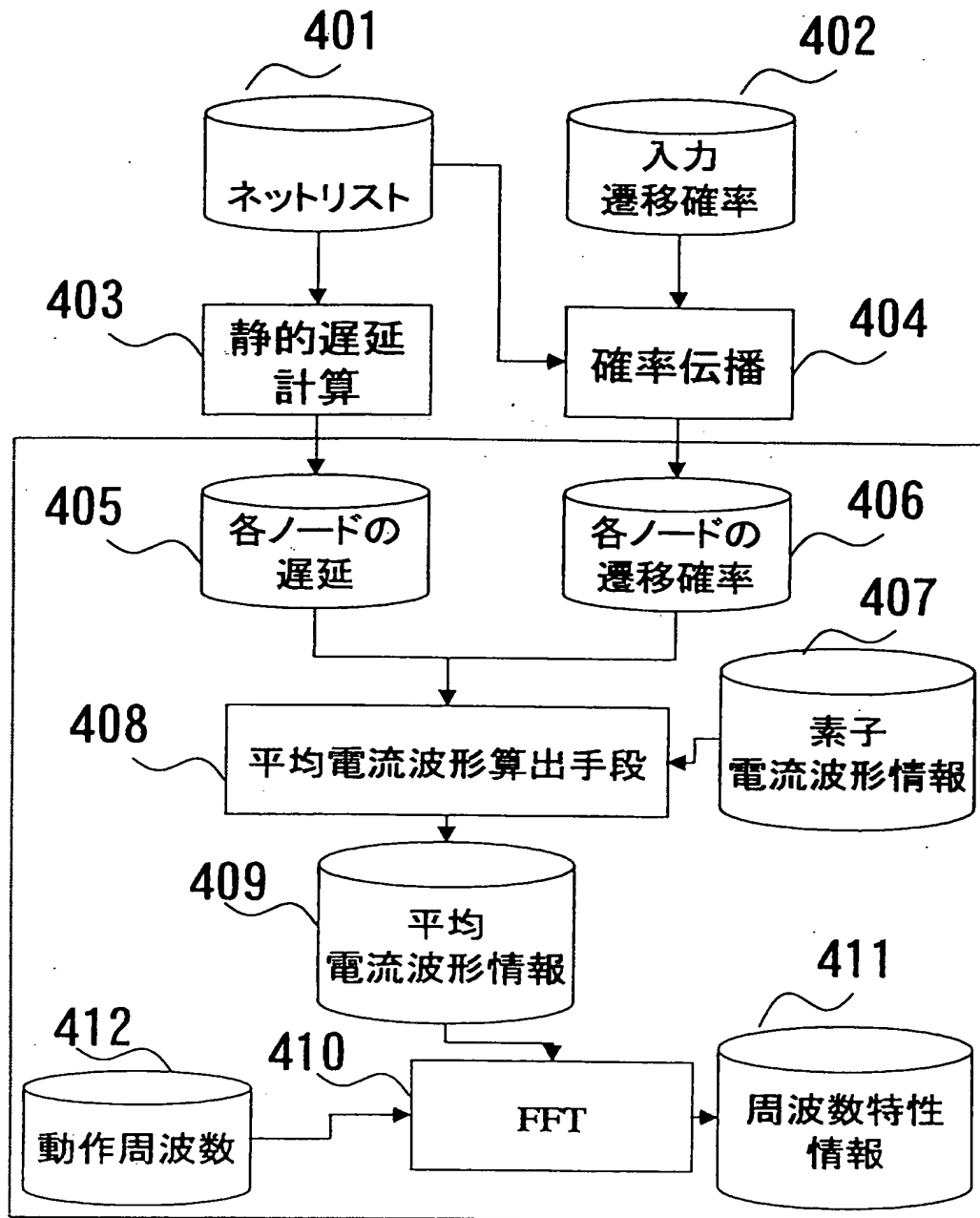


Fig. 4.



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Fig. 5A

(a)遅延情報

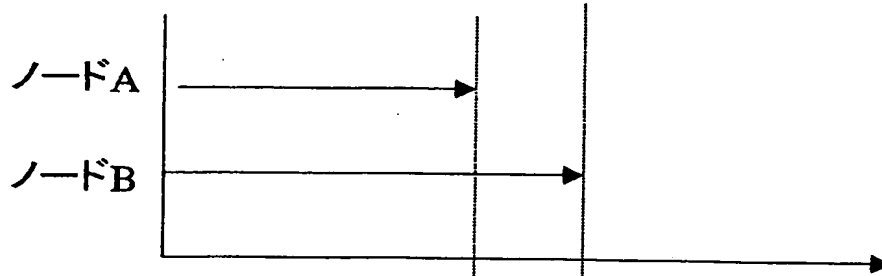


Fig. 5B 確率情報

ノードA
50%

ノードB
80%

Fig. 5C 素子電流波形情報

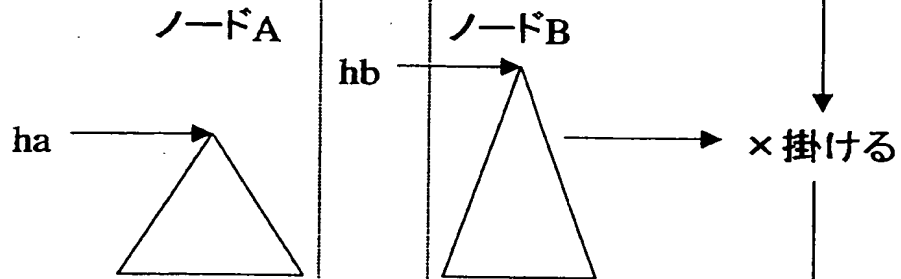
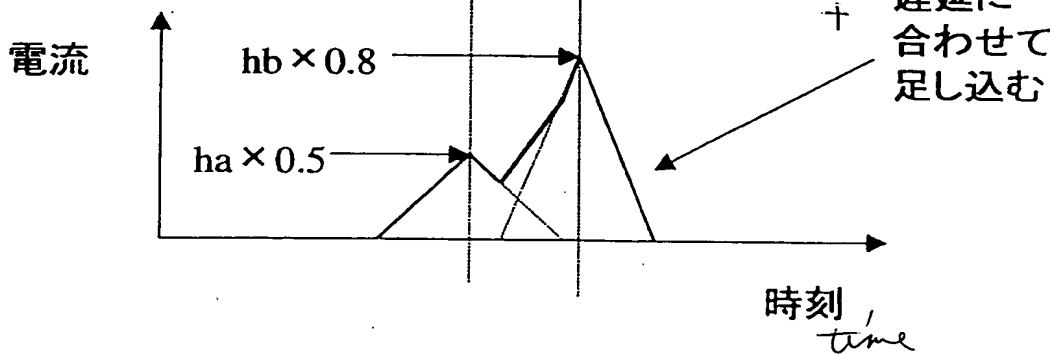


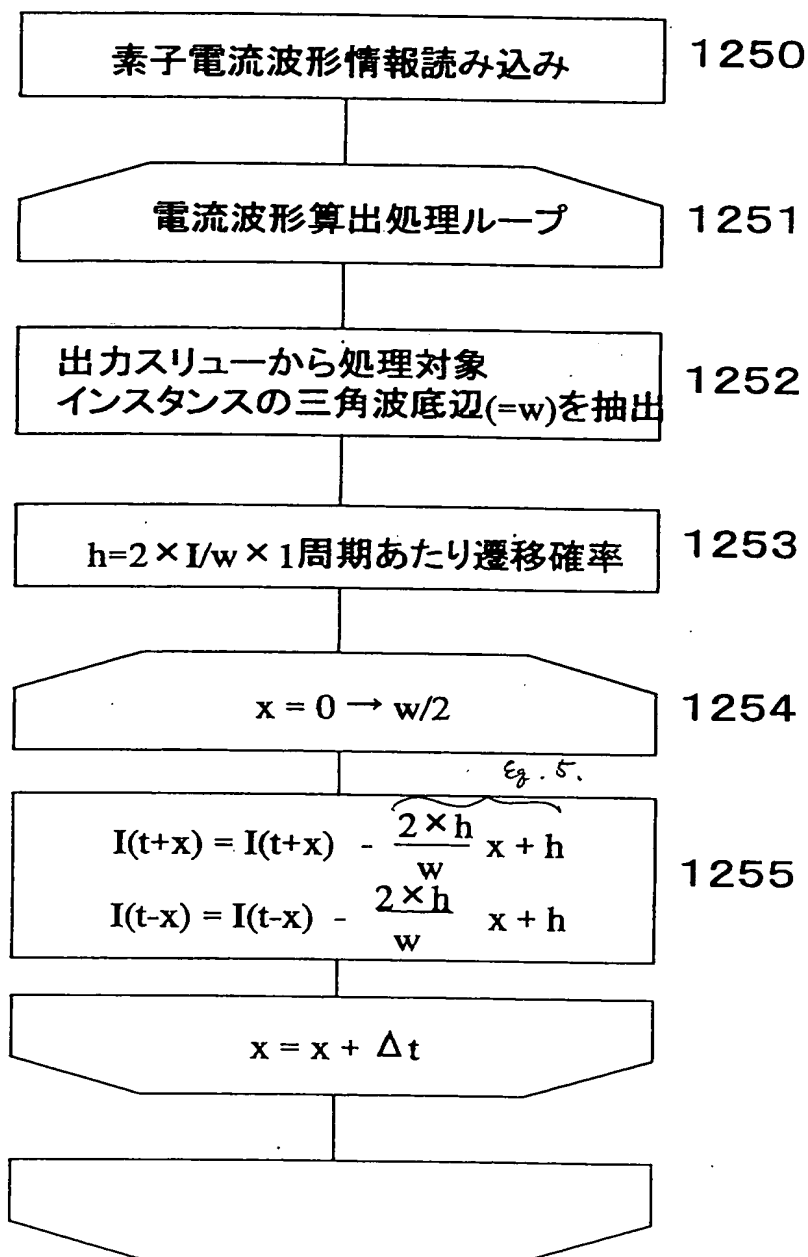
Fig. 5D 平均電流波形情報



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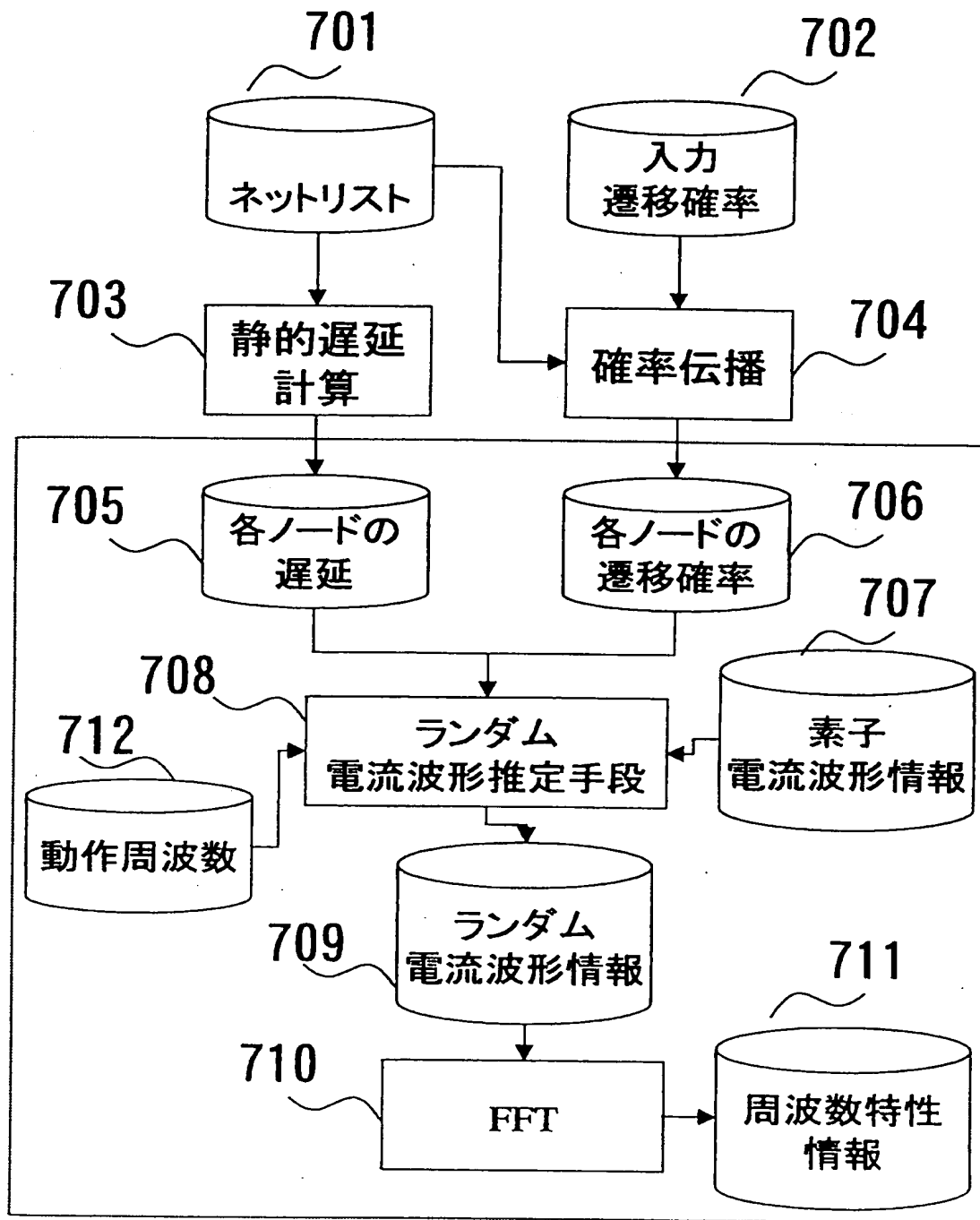
Fig. 6

平均電流波形算出手段処理フロー図



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Fig. 7



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Fig. 8A 遅延情報

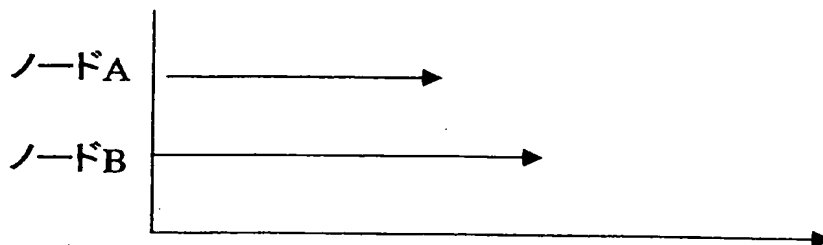


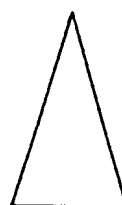
Fig. 8B 確率情報

ノードA 50% ノードB 80%

Fig. 8C, 素子電流波形情報

ノードA

ノードB



確率に
合わせて
各周期に
ランダムに
足し込む

Fig. 8D ランダム電流波形情報

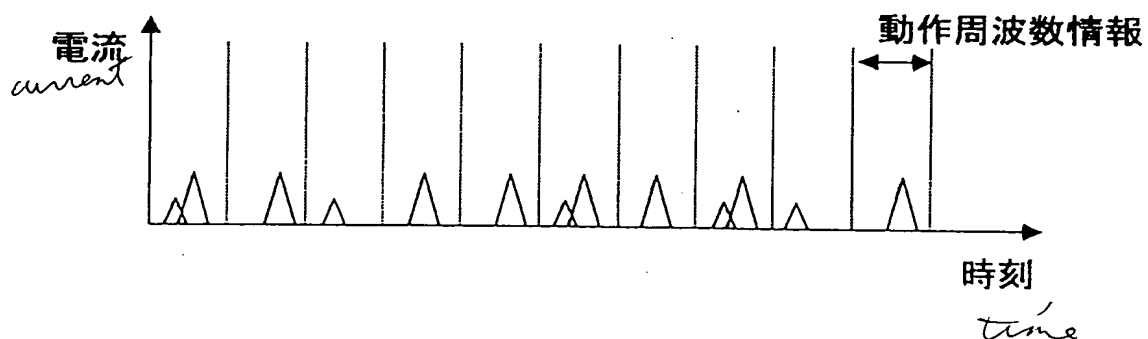
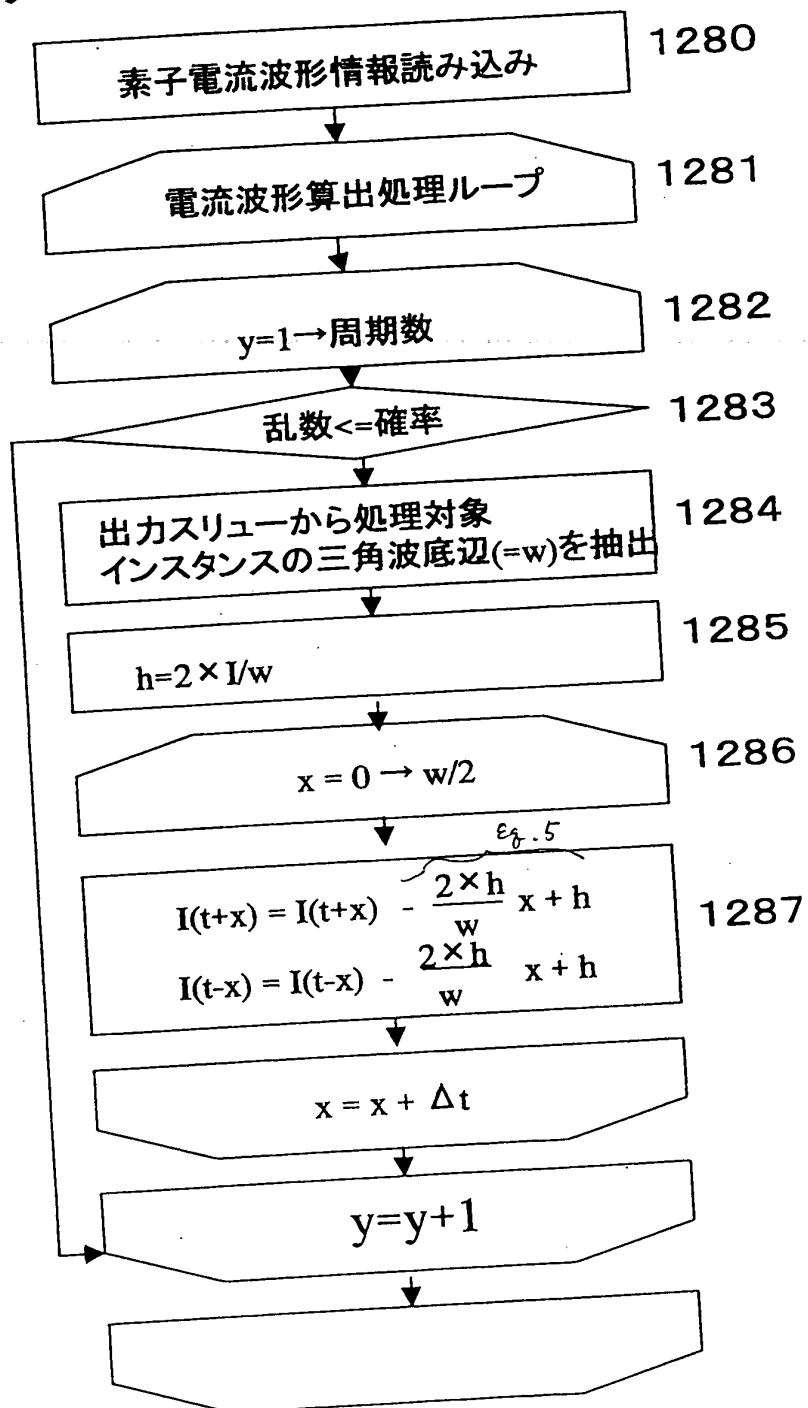


Fig. 9

ランダム電流波形算出手段処理フロー図



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Fig. 10

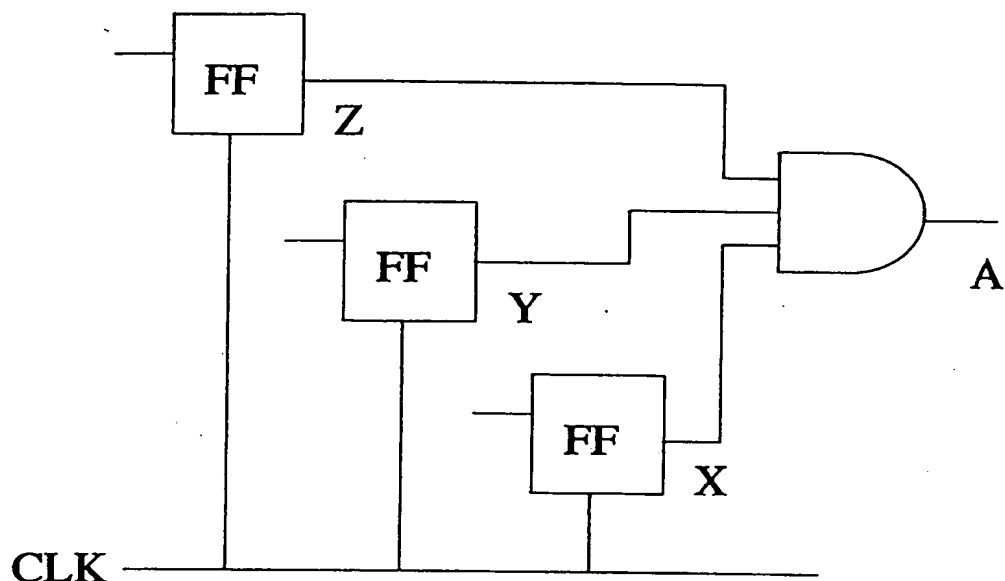
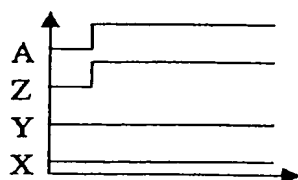
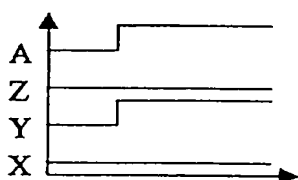


Fig. 11

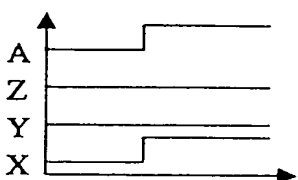
パスZ-A



パスY-A



パスX-A



複数パス毎の遅延・遷移確率情報を盛り込む。

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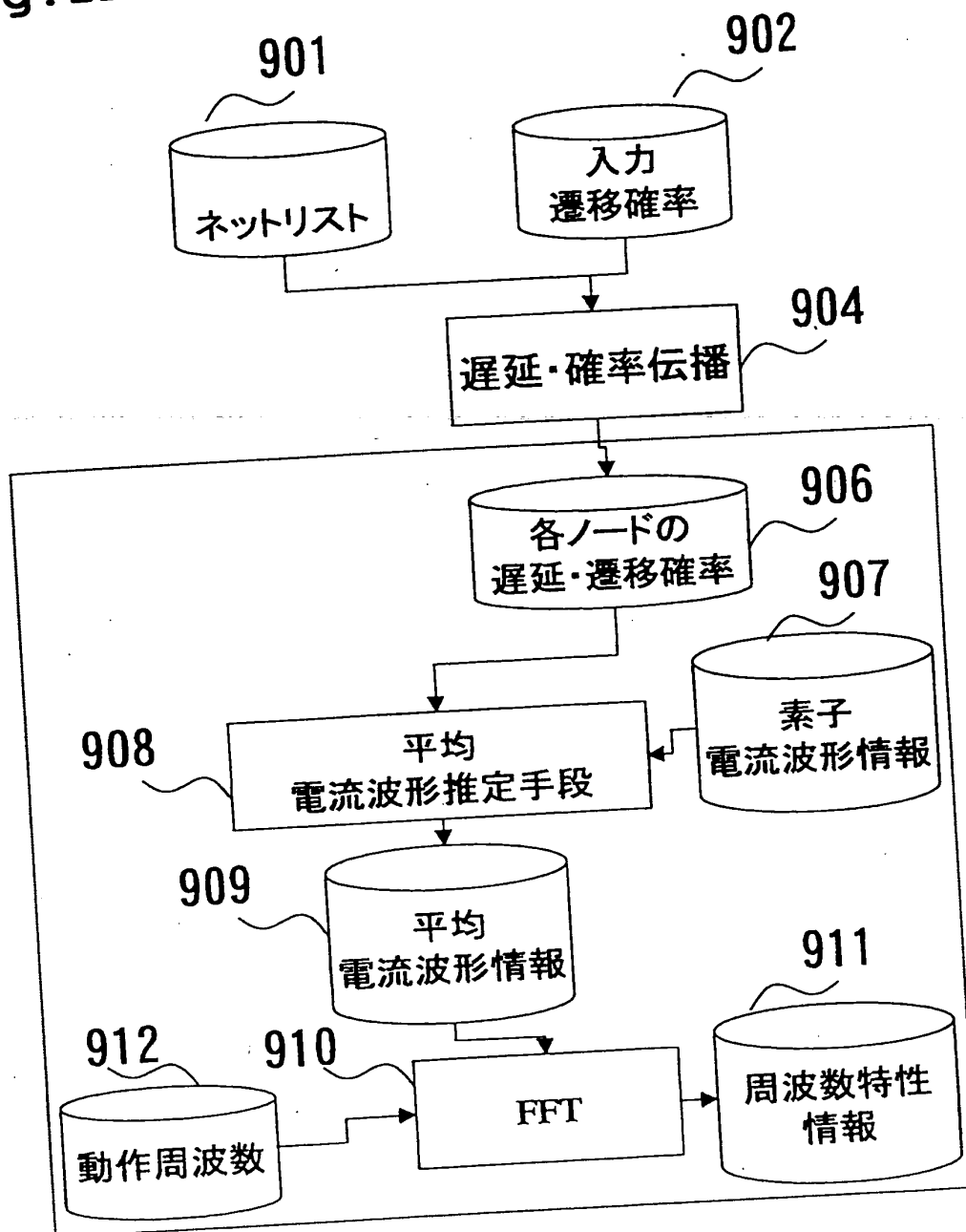


Fig.13A 遅延・遷移確率情報

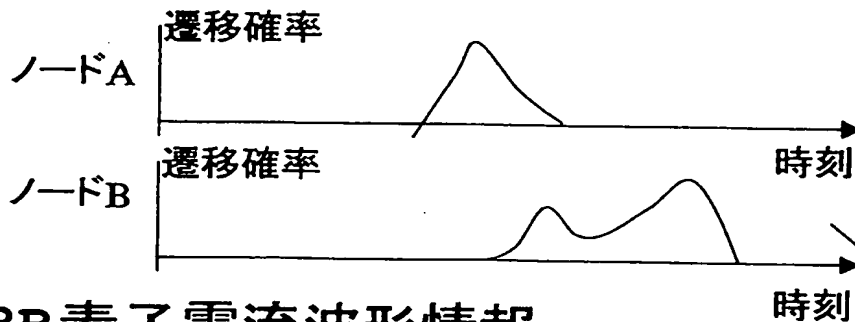
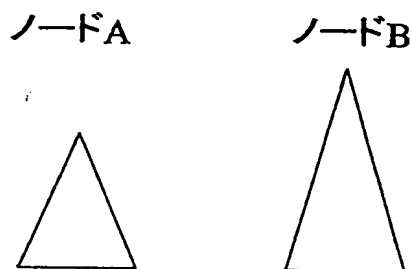
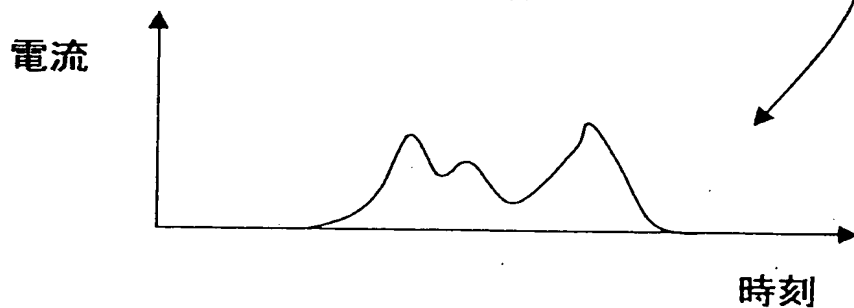


Fig.13B 素子電流波形情報



X 掛ける

Fig.13C 平均電流波形情報

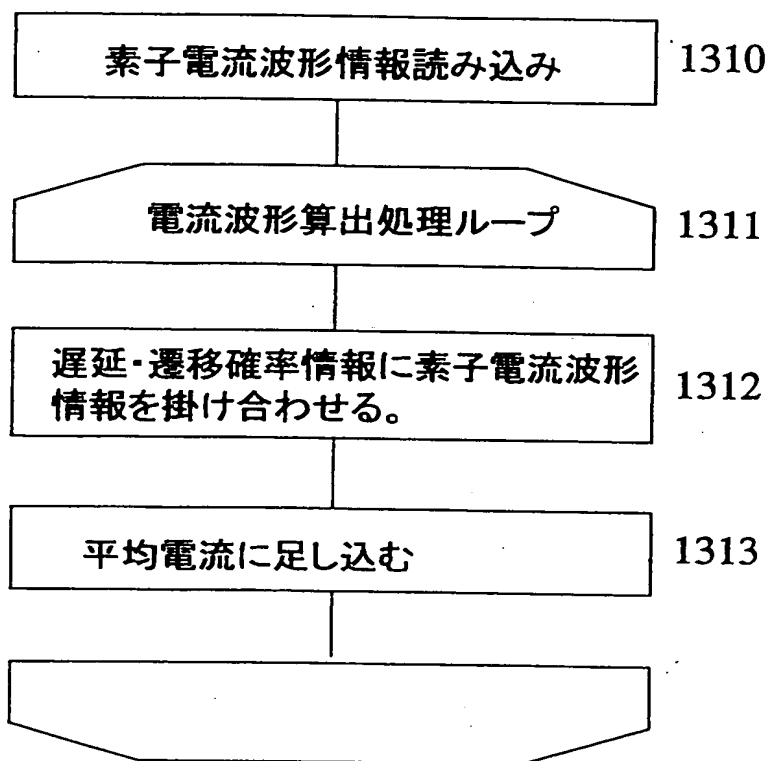


+ 足し込む

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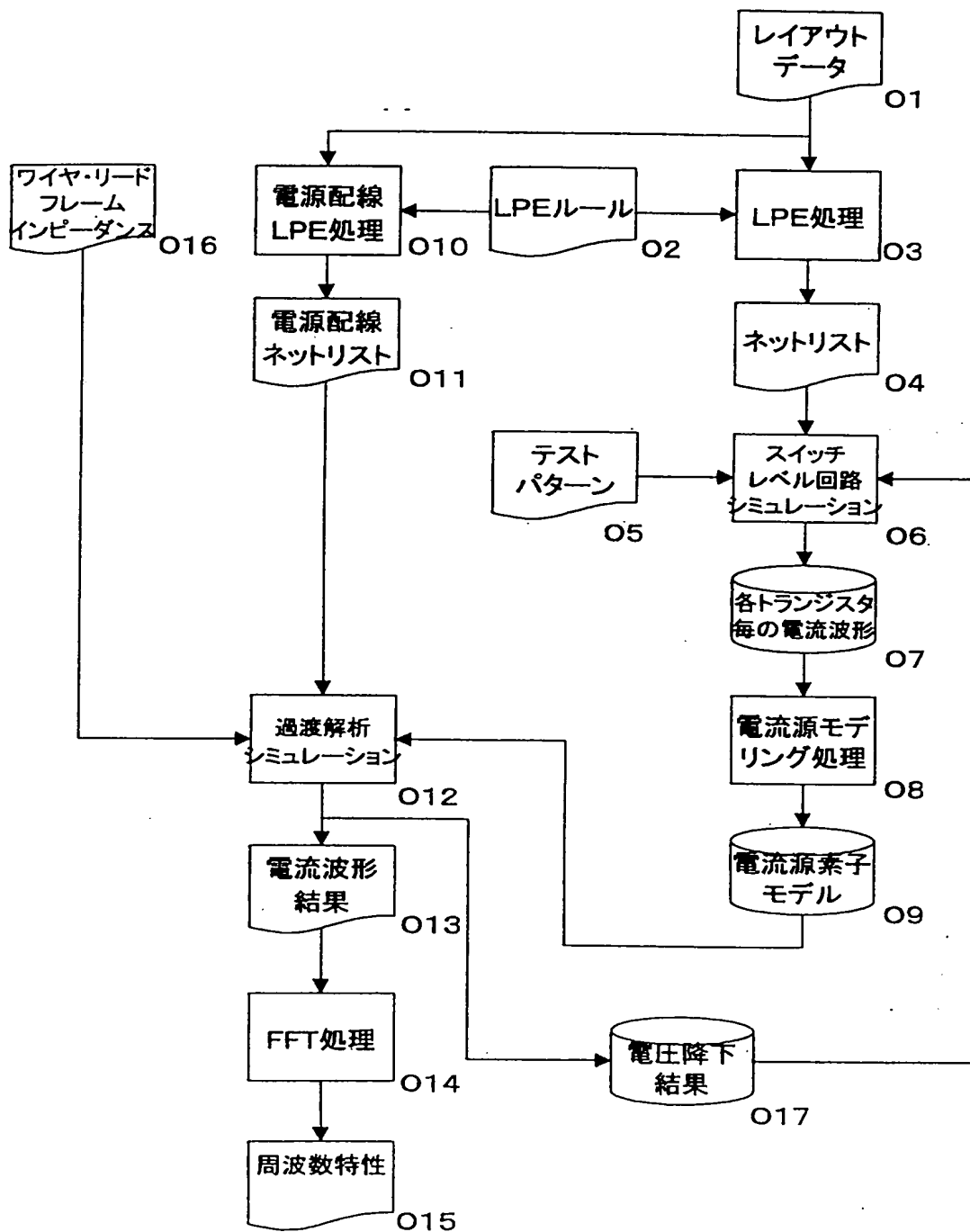
Fig.14

平均電流波形算出手段処理フロー図



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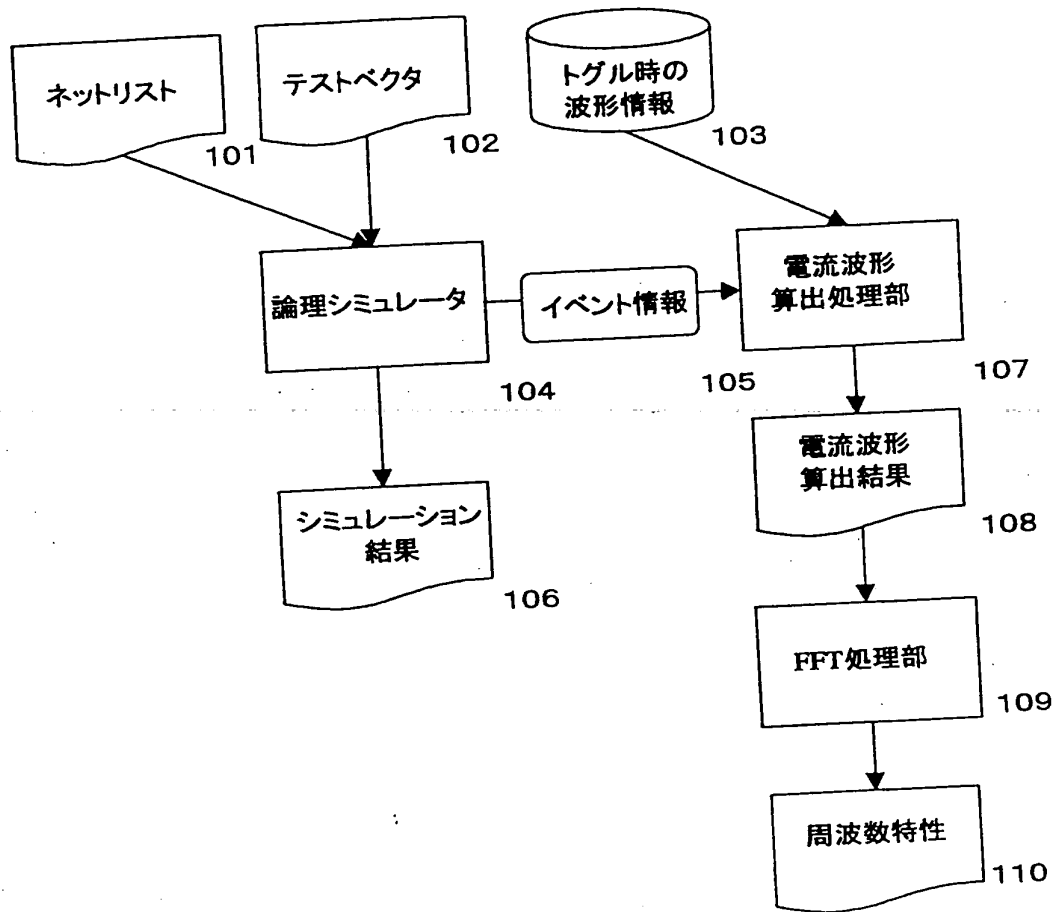
Fig.15



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整理番号=5037610070

Fig.16



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[DESIGNATION OF DOCUMENT] DRAWINGS

[FIG. 1]

1 NETLIST

2 TRANSITION PROBABILITY

3 WAVEFORM INFORMATION FORMED AT THE TIME OF TOGGLING

4 PROPAGATION PROBABILITY AND CALCULATION OF STATIC DELAY

5 PROBABILITY AND DELAY OF RESPECTIVE NODE

6 CURRENT WAVEFORM ESTIMATION SECTION

7 CURRENT WAVEFORM ESTIMATION RESULT

8 FFT PROCESSING SECTION

9 FREQUENCY CHARACTERISTIC

[FIG. 3A]

TIME

[FIG. 3B]

DELAY, DELAY, TIME

[FIG. 4]

401 NETLIST

402 INPUT TRANSITION PROBABILITY

403 STATIC DELAY CALCULATION

404 PROPAGATION PROBABILITY

405 DELAY OF RESPECTIVE NODE

406 TRANSITION PROBABILITY OF RESPECTIVE NODE

407 ELEMENT CURRENT WAVEFORM INFORMATION

408 AVERAGE CURRENT WAVEFORM CALCUALTION MEANS

409 AVERAGE CURRENT WAVEFORM INFORMATION

411 FREQUENCY CHARACTERISTIC INFORMATION

412 OPERATING FREQUENCY

[FIG. 5A]

DELAY INFORMATION

NODE A, NODE B

[FIG. 5B]

PROBABILITY INFORMATION

NODE A, NODE B

[FIG. 5C]

ELEMENT CURRENT WAVEFORM INFORMATION

NODE A, NODE B

MULTIPLIED BY

[FIG. 5D]

AVERAGE CURRENT WAVEFORM INFORMATION

CURRENT, TIME

ADD INFORMATION TO DELAY TIME

[FIG. 6]

FLOWCHART OF AVERAGE CURRENT WAVEFORM CALCULATION PROCESSING

1250 READ ELEMENT CURRENT WAVEFORM INFORMATION

1251 CURRENT WAVEFORM CALCULATION LOOP

1252 EXTRACT, FROM OUTPUT SLEW DATA, THE BASE OF TRIANGULAR WAVEFORM

(=w) OF AN INSTANCE TO BE PROCESSED

1253 TRANSITION PROBABILITY PER $h=2 \times I/2 \times 1$

[FIG. 7]

701 NETLIST

702 INPUT TRANSITION PROBABILITY

703 STATIC DELAY CALCULATION

704 PROPAGATION PROBABILITY

705 DELAY OF RESPECTIVE NODE

706 TRANSITION PROBABILITY OF RESPECTIVE NODE

707 ELEMENT CURRENT WAVEFORM INFORMATION

708 RANDOM CURRENT WAVEFORM CALCUALTION MEANS

709 RANDOM CURRENT WAVEFORM INFORMATION

711 FREQUENCY CHARACTERISTIC INFORMATION

712 OPERATING FREQUENCY

[FIG. 8A]

DELAY INFORMATION

NODE A, NODE B

[FIG. 8B]

PROBABILITY INFORMATION

NODE A, NODE B

[FIG. 8C]

ELEMENT CURRENT WAVEFORM INFORMATION

NODE A, NODE B

RANDOMLY ADD INFORMATION TO RESPECTIVE CYCLE IN ACCORDANCE WITH

PROBABILITY

[FIG. 8D]

RANDOM CURRENT WAVEFORM INFORMATION

CURRENT, TIME

OPERATING FREQUENCY INFORMATION

[FIG. 9]

FLOWCHART OF RANDOM CURRENT WAVEFORM CALCULATION PROCESSING

1280 READ ELEMENT CURRENT WAVEFORM INFORMATION

1281 CURRENT WAVEFORM CALCULATION LOOP

1282 PERFORM LOOP PROCESSING UNTIL $y=1$ ASSUMES THE VALUE OF A FREQUENCY

1283 DETERMINE WHETHER OR NOT A RANDOM NUMBER IS SMALLER THAN THE VALUE
OF PROBABILITY

1284 EXTRACT, FROM OUTPUT SLEW DATA, THE BASE OF TRIANGULAR WAVEFORM
(=w) OF AN INSTANCE TO BE PROCESSED

[FIG. 11]

ADD DELAY AND TRANSITION PROBABILITY INFORMATION UNIQUE TO EACH OF

PATHS TO DELAY TRANSITION PROBABILITY INFORMATION

delay transition probability information

[FIG. 12]

901 NETLIST

902 INPUT TRANSITION PROBABILITY

903 DELAY AND PROPAGATION PROBABILITY

906 DELAY AND TRANSITION PROBABILITY OF RESPECTIVE NODE

907 ELEMENT CURRENT WAVEFORM INFORMATION

908 AVERAGE CURRENT WAVEFORM ESTIMATION MEANS

909 AVERAGE CURRENT WAVEFORM INFORMATION

911 FREQUENCY CHARACTERISTIC INFORMATION

912 OPERATING FREQUENCY

[FIG. 13A]

DELAY/TRANSITION PROBABILITY INFORMATION

NODE A, NODE B

TRANSITION PROBABILITY

TIME

[FIG. 13B]

ELEMENT CURRENT WAVEFORM INFORMATION

NODE A, NODE B

MULTIPLY

[FIG. 13C]

AVERAGE CURRENT WAVEFORM INFORMATION

ADD

CURRENT, TIME

[FIG. 14]

FLOWCHART OF PROCESSING PERTAINING TO AVERAGE CURRENT WAVEFORM

CALCULATION MEANS

1310 READ ELEMENT CURRENT WAVEFORM INFORMATION

1311 CURRENT WAVEFORM CALCULATION LOOP

1312 MULTIPLY DELAY/TRANSITION PROBABILITY INFORMATION BY CURRENT
WAVEFORM INFORMATION

1313 ADD RESULTANT INFORMATION TO AVERAGE CURRENT

[FIG. 15]

01 LAYOUT DATA

02 LPE RULE

03 LPE PROCESSING

04 NETLIST

05 TEST PATTERN

06 SWITCH-SCALE CIRCUIT SIMULATION

07 CURRENT WAVEFORM OF RESPECTIVE TRANSISTOR

08 MODELING OF CURRENT SOURCE

09 MODELING OF CURRENT-SOURCE ELEMENT

010 POWER LINE LPE PROCESSING

011 POWER LINE NETLIST

012 TRANSITION ANALYSIS SIMULATION

013 CURRENT WAVEFORM RESULT

014 FFT PROCESSING

015 FREQUENCY CHARACTERISTIC

016 WIRE/LEADFRAME IMPEDANCE

017 VOLTAGE DROP RESULT

[FIG. 16]

101 NETLIST

102 TEST VECTOR

103 WAVEFORM INFORMATION FORMED AT THE TIME OF TOGGLING

104 LOGIC SIMULATOR

105 EVENT INFORMATION

106 SIMULATION RESULT

107 CURRENT WAVEFORM CALCULATION SECTION

108 CURRENT WAVEFORM CALCULATION RESULT

109 FFT PROCESSING

110 FREQUENCY CHARACTERISTIC

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